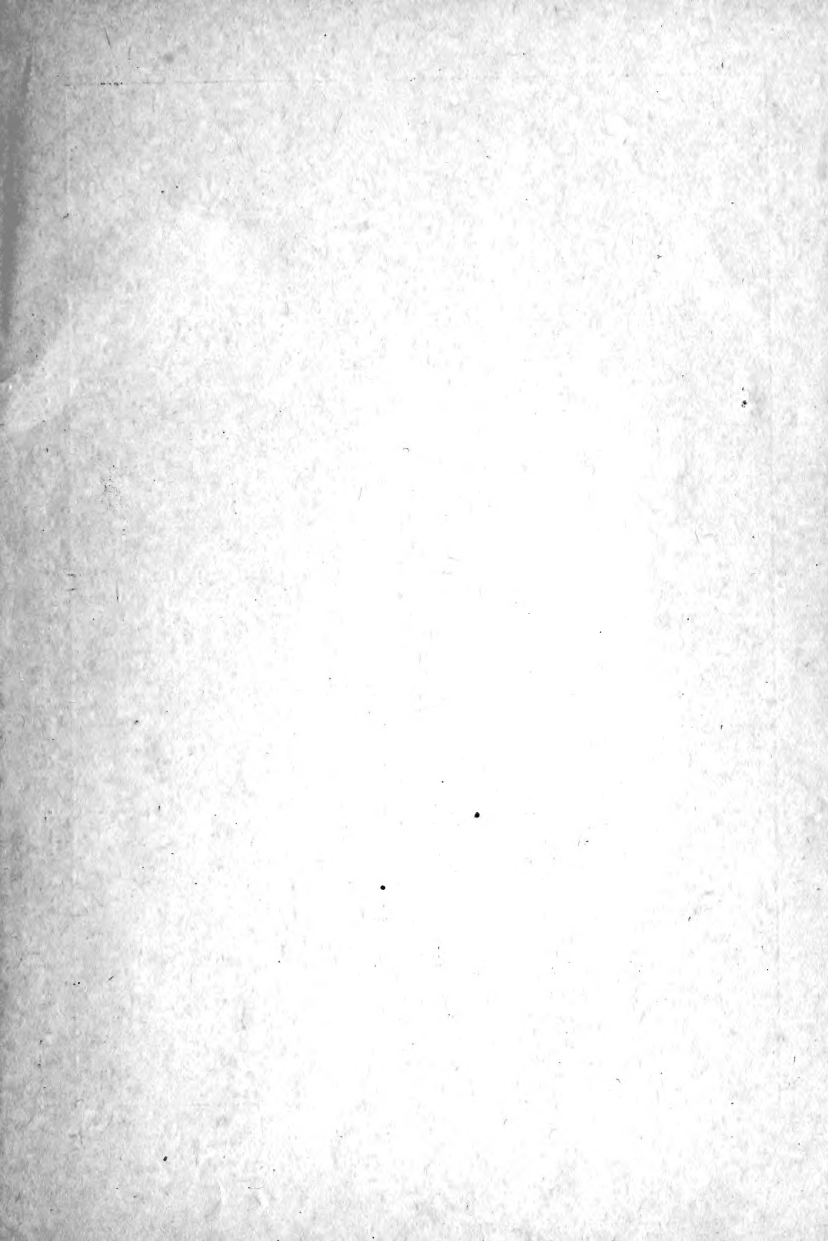
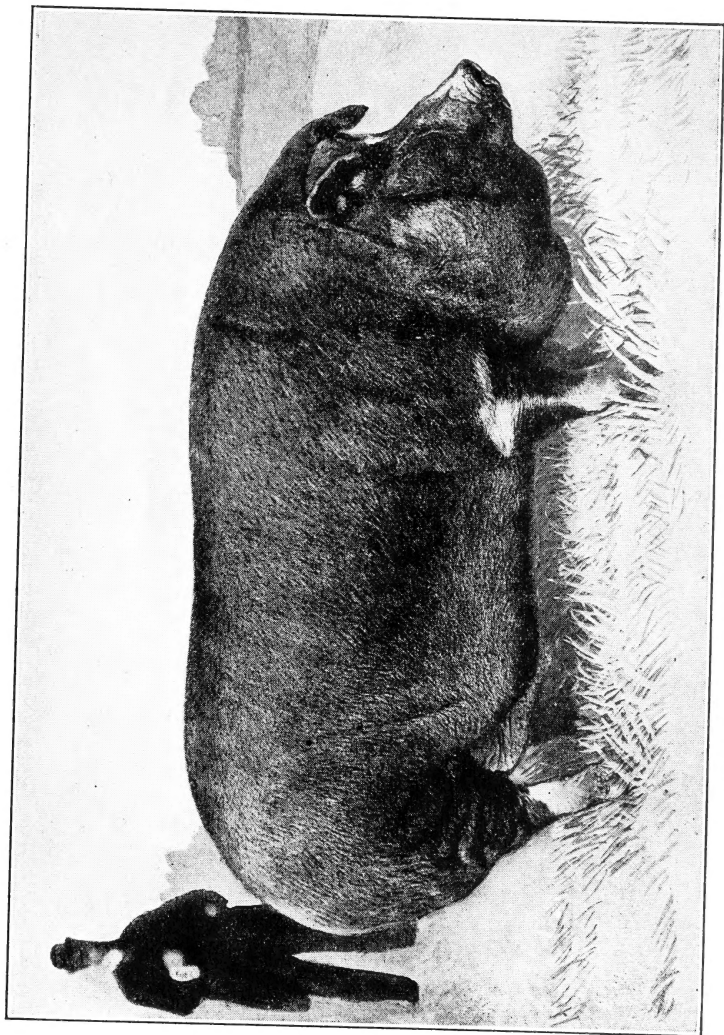




How to Make Money with Hogs

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OCT 20 1915

How to Make Money With Hogs

A Text Book *for the* Hog Raiser
and Producer of Pork Products

By

F. D. COBURN

Former Secretary Kansas Department of Agriculture

and

CAMILLUS PHILLIPS

of Traymore Manor, Traymore, Bucks County, Pa.

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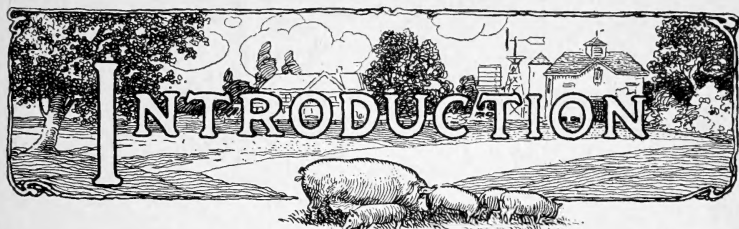
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no. 1.



TO the owners of swine, the publishers desire to say a few words in reference to the contents of this book. All of the information included in the following pages has been obtained from the best authoritative sources.

The section on the care and raising of swine has been especially written by Mr. F. D. Coburn, the greatest authority on hogs in America. For over 20 years Mr. Coburn was secretary of the Kansas Department of Agriculture. He has made a life study of swine, both from the scientific and from the practical point of view. His word is undisputed among the thousands of successful raisers of hogs in the largest pork-producing States of this country.

In securing the services of this noted authority, in the preparation of this book, we know that we are placing before swine owners information and facts that are of inestimable value in securing the greatest profits possible from hogs, and in eliminating the many wastes and losses due to the ignorant handling and raising of pigs.

In the second section, covering the slaughtering, dressing and preparation of hogs into pork products, Mr. Camillus

Phillips has incorporated practical methods and the "trade secrets" used by the most successful marketers of pork products. Mr. Camillus Phillips, of Traymore Manor, is situated in the midst of successful farmers who are making big profits from the raising of swine and the preparation of sausage and lard for the market.

All the methods of procedure detailed in this section of our book, have been tried and tested many times. They enable the owner of swine to secure every possible cent of profits from every pound of pig on his farm.

We know that in this book we have compiled facts and information never before gotten together, that in this concise, readable form we place before our readers the facts that will enable them to make the biggest possible success with swine.

THE ENTERPRISE MFG. CO. OF PA.

The Selection, Care and Raising of Hogs

By HON. F. D. COBURN

Former Secretary Kansas Department of Agriculture

America is by far the foremost swine-raising country in the world, because of its leadership in Indian corn production and favorable climatic conditions. No animals are better adapted to converting their feed quickly into ready marketable-for-cash product than the hog, and no others give better return for judicious feeding and management. In any phase of farm economy swine are important, and their proper rearing has in millions of instances made possible a farm's profit.

The hog by nature is omnivorous and eats a great variety of food if allowed his choice. A variety will always produce better results, at less cost, than any one feed. Hence in the economical growing of pork there is no more important item than pasturage. Range in pasture affords the exercise necessary to health and proper development; and the inexpensive succulent clovers, grasses and like vegetation, while rich in muscle and bone-forming materials tend to promote growth, prevent disease and to counteract the fever-imparting properties of the grains, and especially corn. These annually save untold sums to breeders, yet the loss that results every day to those who do not act upon the fact that the hog is, in his normal condition, largely a ranging, grass-eating animal, is still enormous. Brood sows that live in the open, with plenty of green food and only a limited quantity of grain have conditions highly favorable for best results, in comparison with those confined in close quarters and to a dry or grain diet. It should be re-

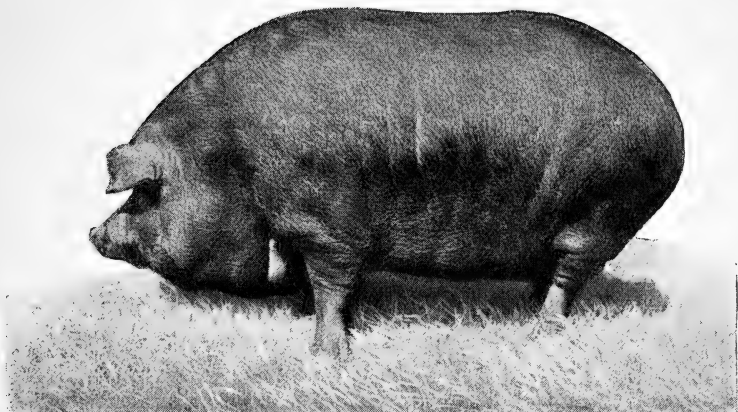
membered, however, that a hog is primarily adapted to concentrated feeds, consequently should not be expected to live and do well on roughage alone.

Hogs of the present time in America have but two general classifications, namely "lard hogs" and "bacon hogs." Under the first head come Poland-Chinas, Berkshires, Chester Whites, Duroc-Jerseys and Hampshires; under the second, Yorkshires and Tamworths. The lard hogs lead overwhelmingly in numbers and from these the great bulk of the pork and lard of commerce is made. Bacon type swine are gaunt and leggy and their flesh has a larger proportion of lean to fat than that of other breeds. All these can if desired be grown to great weights—sometimes as much as a thousand pounds.

There is always a temptation confronting the inexperienced to cross animals of different pure breeds, thinking to thereby fix in the offspring the good qualities and eliminate the defects of the parents, and from these establish a strain little less than perfect. Practice proves this utterly fallacious. It is not infrequently the case that among the product of a first cross there may be individuals superior to either of the parents, but breeding these gives no guarantee of continued excellence or uniformity. These are circumstances under which like does not beget like.

The Cost of Raising Hogs

In the chief hog-growing territory of the United States, where pasturage is supplied in connection with Indian corn, the principal grain food, the cost of hogs ready for slaughter is from $2\frac{3}{4}$ to $3\frac{1}{2}$ cents per pound, live weight. Many are raised that cost more, yet seldom so much that they do not yield a profit. While much greater weight is possible, the man who with any considerable herd reared on the usual

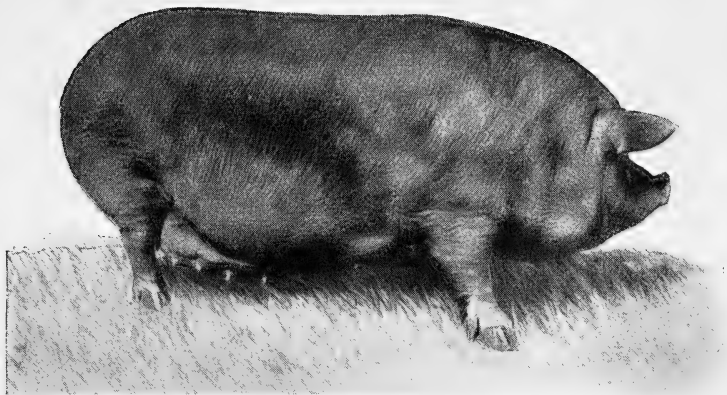


Poland China Boar.

Note the full, broad, deep and firm jowl. The broad and long hams. The legs are medium in length, straight, well set apart; fine straight, smooth coat lying close to body. Color, black. Six white points, tip of tail; four white feet; white in face on nose or point of lower jaw.

feeds produced by the farm, markets them averaging a pound for each day of their age is more than ordinarily successful. Where corn is the principal grain used, well bred, well-fed hogs without special care are expected to show ten pounds of gain per bushel of corn consumed, although properly managed they should do better.

Latter day tendencies are all toward marketing hogs of lighter weights and younger than formerly. The swine eighteen to thirty months old, that were the abnormal piles of fat formerly approved and commanding the highest prices, are now regarded as altogether unprofitable, if not unwholesome. Suggestive of the younger marketing of hogs nowadays, and their lighter weights when considered ready, is the fact that the average of the 2,085,556 head shipped to the Kansas City market in a recent year was



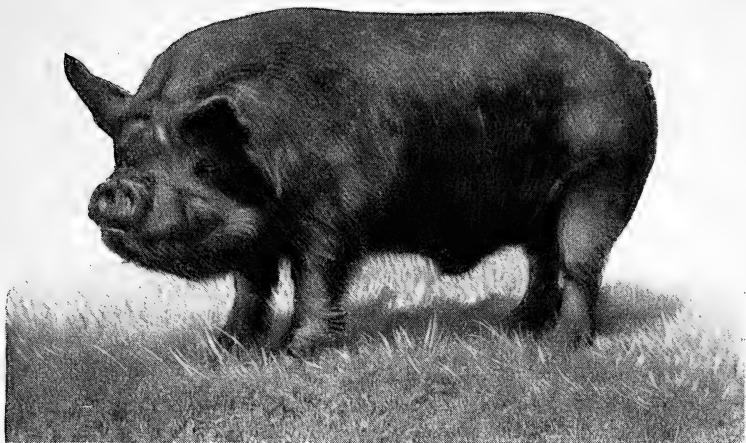
Berkshire Sow.

The Berkshire is an extremely popular breed. Color, black. Skin and hair tinged with bronze or copper. Short broad snout and face well dished. Jaw full and heavy running well back on the neck. Flank, set well back and low down on leg. Hams, deep and thick extending well up. Thoroughbreds are attractive, spirited and vigorous.

but 204 pounds, and of those in the preceding year 210 pounds. The averages of such large numbers, coming in different years from the foremost hog-growing territory in the world, indicate that in this respect they were typical of their time.

The Breeds and Their Characteristics

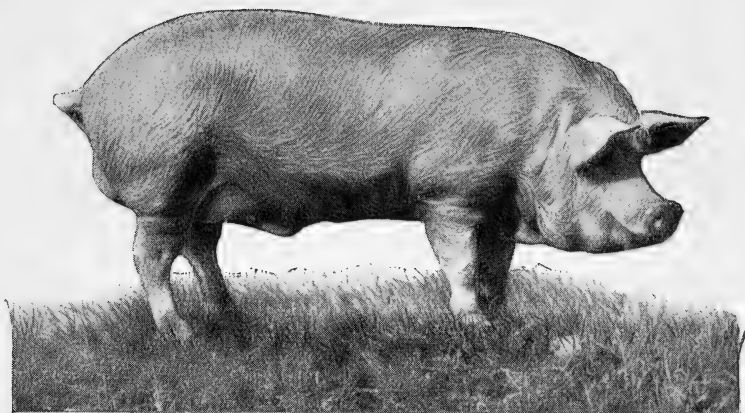
Poland-Chinas.—Poland Chinas originated in Butler and Warren counties, Ohio, about 1838-1840, from crossing various families there known as Big China, Byfield, Bedford and Irish Grazier, the offspring being a large and somewhat coarse black-and-white spotted swine called by various names, for which a national convention of swine-breeders, in 1872, selected that of Poland-China. These were crossed with imported Berkshires to give refinement and



Berkshire Boar.

A good type of high style Berkshire boar. Note the dished face, short sturdy legs, the fine, soft and abundant hair. Medium sized ears are erect, except in middle-aged animals, where they are inclined to droop.

propensity to early fattening, and incidentally they acquired even then and still have much of the Berkshire's conformation—black color and white markings. They have medium to small drooping ears. This breed, pre-eminently an American product, is perhaps foremost in number and popularity throughout the corn-producing regions. They are docile, growthy, easy feeders and hardy. Efforts to breed out the coarseness of the earlier Ohio stock were carried to such an extreme as to be considered detrimental, and since about 1892 many breeders have been mating for more bone, bulk and growthiness, until now Poland-Chinas of great size, and known as "Big Type" are in a very considerable degree displacing their neater, finer-boned and possibly more delicate predecessors. Here and there an attempt

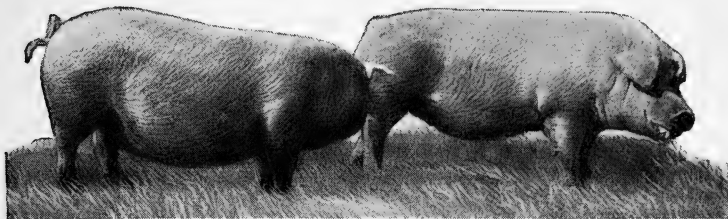


Chester White Boar.

A Pennsylvania breed. Lengthy and of good size. Remarkably active. Gentle disposition. Ears rather thin and well proportioned, drooping. Coat fine and thick, and always silvery white.

is being made to establish families having the characteristics of the earlier Poland-Chinas, most conspicuous of which was the predominating white color, interspersed with black spots or patches.

Berkshires.—The Berkshire, in its less improved form originated, as did the Essex, in England, from Italian and Spanish swine crossed with the coarser native stock, between 1780 and 1800. Although first introduced to North America about 1830, it did not obtain general or permanent favor until after 1870. The breed is widely disseminated in America, and justly a favorite, both to breed pure and to cross with other breeds. American breeders have done much to improve the size, form and character of the Berkshire, and it is doubtful if for general utility they are outclassed by swine of any breed. They are active, robust, hardy, self-reliant grazers, and grow with some white on

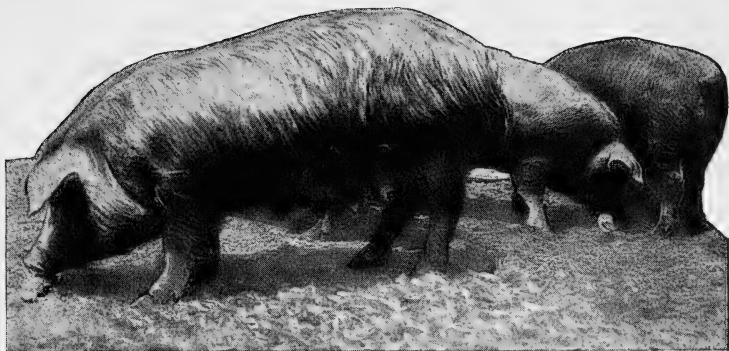


Chester White Pigs.

Showing the characteristic hair of this breed, and the short legs. Chesters are classed among the largest swine known, maturing from five hundred to six hundred pounds. The Ohio Improved Chester or O. I. C. swine are a cross between Chesters and native Ohio stock.

the face, jowls and tail, and usually they have some or all white feet. Their ears are rather erect, inclining to droop with age. Berkshires rate high for bacon making.

Chester Whites.—This large, white breed had its beginnings in Chester county, Pennsylvania, 1818-1830, by mating some white boars from Bedfordshire, England, with the best sows of the stock then common in Chester county. By careful selection and mating the thrifty Quakers of that vicinity in the ensuing forty years developed a strain that deservedly attracted much favorable attention by their many good qualities, including docility, large size and profitable growth. Following the close of the Civil War they were extensively disseminated throughout the United States, but later their popularity waned, mainly because apparently they were more subject to skin diseases than swine of darker colors. In the past ten years, however, they have again come into much favor, with both growers and packers. They have abundant hair, drooping ears, and fairly short, broad faces. Some of the heaviest hogs ever grown have been Chester Whites.



Duroc-Jersey Pigs.

Sandy, or cherry red in color, small head; medium dished face. Jowl broad and full. Moderate broad shoulders. Hams and rump broad and full. Legs medium in size and length, set straight and wide apart.

Duroc-Jerseys.—The Duroc-Jerseys, sometimes “cherry red,” and sometimes sandy, sometimes ginger-colored, and again almost a dirty black, drooping-eared, are the result of a blending in recent years of families that first attracted prominent attention in New Jersey where they were known as “Jersey Reds,” with the somewhat different type common in Saratoga County, New York, and locally known as “Durocs.” The best of them are very easy feeders, full of quality, and in many instances carry extreme weight firmly on bones astonishingly small. They are hardy, prolific, and quiet in disposition. Their increase in popular esteem in the corn belt in the past twenty-five years has been phenomenal, and those best acquainted with them claim there are none better. High quality is not confined to any one color or shade of these swine, so generally spoken of as “red.” Except in color the Duroc-Jerseys are not essentially different from Poland-Chinas and Chester Whites



Duroc-Jersey Boar.

Fine type of this special breed, showing the characteristic features fully developed. The size is generally large for age. Boars two years old weighing about six hundred pounds. Vigorous and animated in action with a free and easy style. Quiet and gentle.

in general appearance and quality. Suggestive of their prolificacy and mothering qualities is the fact that a Barton county, Kansas, man owned a sow that when 23 months and 10 days old had farrowed litters of 13, 12 and 20, or a total of 45 pigs within 11 months and 5 days, and raised 23 of them.

Hampshires.—Hampshires are understood to have been introduced to Pennsylvania from England perhaps eighty years ago, and found their principal appreciation in Kentucky, where they were reared to a limited extent and known as "Thin-Rind" or "Belted" hogs. In 1904 their admirers formed an Association, established a pedigree record and named their favorites Hampshires. They are rather of the bacon type, leggy, have long, narrow faces, somewhat erect ears, and are black, with a belt of white four to twelve inches wide encircling the fore part of the body.



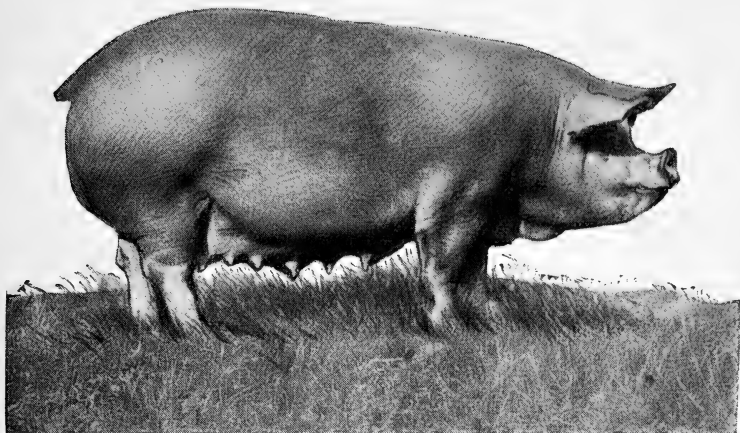
Tamworth Sow.

Tamworths are primarily bacon hogs. Golden red in color of hair with flesh color skin. Snout is moderately long and straight, with only slightly dished face. Legs are strong with plenty of bone and set well outside of body. Note the long and deep sides with the straight underline. Sows usually have large litters.

While they are reasonably quiet and fatten readily with abundant feed they are by no means sluggish; on the other hand they are the best of grazers and take care of themselves better than do some others.

Yorkshires.—The lengthy, short-nosed white hogs from England, mostly spoken of here as Large Yorkshires and in England as Large Whites, are perhaps, as to numbers, the most popular bacon swine we have and are excellent for their purpose. They are not numerous in the States, but find much favor with Canadians. Although somewhat leggy they are less so than the Tamworths, and with their symmetry and better heads are far more comely.

Tamworths.—Tamworths are “red” or sandy hogs known in parts of England for a long time, but apparently



Yorkshire Sow.

A bacon breed. The "Small White" Yorkshire is known in America as the Suffolk. Note the long, deep build and outline of this type. The legs not so long as the Tamworth. Upturned snout, the curve increasing with age. Color white with smooth white skin. Active in movement.

little was done for their improvement, as improvement is regarded in the United States, for in thin flesh they look in some respects startlingly like wild hogs, consisting largely of head, legs and heavy ears, somewhat upright. They are active, almost to restlessness, hardy and prolific, but never become very fat and for this reason they are raised for their large proportion of leanish bacon. It is in Canada that they are most appreciated, and in the States they cut but small figure.

Mule-Foots.—A type of swine brought considerably to public attention within the latter part of the present decade, is designated as Mule-Foot. Their distinguishing peculiarity is solid instead of cleft hoofs, and wattles, hair-covered, and one to four inches long, pendant from each

side of the lower jaw. In southern Missouri and northern Arkansas, where they are well known, they have generally been called "Ozarks." Their color is mostly black, with various white markings. In size medium, they are of fair quality, but without special merits not possessed by the better known breeds.

Other Breeds.—Other recognized breeds that had some general or local repute fifty years ago, but now practically obsolete, are the wholly-black Essex from England, Suffolks (known also as Small Yorkshires and Prince Alberts) a silvery white, chubby, undersized, tender-skinned sort also English, and the Cheshires and Victorias, fairly meritorious white hogs of medium size, but without outstanding qualities that ever gave them any stronghold upon pork-producers in general.



Berkshire Sows and Young Pigs.

Breeding

There is no one best breed for all men, and each possesses some characteristics to recommend it. The beginner should choose a breed with qualities appealing to his individual liking. Having made his choice, he should procure the best of its kind, persevere with it, and persistently

aim to make its progeny better than its ancestors. The farmer generally does not need to care whether the hogs he rears are red, white, or black; whether their ears droop or point skyward. He wants animals with constitution, stamina, strong digestion and quick growth, and animals without these traits he cannot afford to maintain.

Characteristics of the Boar

A boar should be masculine and robust in every respect, or the opposite of feminine, but without coarseness. A moderately short, broad, somewhat dished face, smallish ears, stout neck, broad chest, a smooth, symmetrical body, with a wide back tolerably straight, but slightly arched rather than sagging, all supported on stocky, up-standing short legs, fine, elastic skin covered with abundant lively hair, and a quiet disposition are qualities to be always sought. He should be active, yet not nervous, and friendly and peaceable rather than fierce. He can be a great factor in his owner's prosperity, for he is far more than half the herd; he is half the first generation, three-fourths of the next, seven-eighths of the third, and so on.

The boar's condition should at all times be that of thrift and vigor, nor fat, nor yet so lean that as a barrow he would not be considered fit for slaughter. If too fat he will be clumsy, slow, and in no wise sure in service. After five or six months old he will do best kept by himself, and where sows may not arouse him. He should be in a comfortable pen, with a lot or pasture adjoining, and supplied with a variety of nutritious food. His permanent quarters should have sunlight and dry warmth, be cleanly, and so located that the sows may be conveniently brought to him. He should not be kept in the herd. It is not advis-

able to use him before about eight months old, and preferable but little before he is a yearling. A service not more than three or four times a week is preferable, and once to a sow at one time is sufficient.

Characteristics of the Sow

A sow for breeding should be of a rangy, roomy, deep build rather than short and compact. Her head and throat should be broad and smooth and heart girth large, the latter indicative of room for strong vital organs. Legs should be fairly short and straight, and strong without coarseness. Along with these ribs notably sprung out from a wide back, a well-rounded rump, full hams, and evidence of good milk-giving qualities are essentials. Having these a sow of quiet disposition, prolific and a good suckler is indeed a treasure, and rightly managed is a foundation for a fortune. She may be a mixture of any of the good breeds and mated with a pure-bred boar will farrow litters that for pork-making are of the highest quality.

An open sow not suckling is in season for mating at intervals of about twenty-one days; at breeding time she should be thrifty, but neither fat nor very lean—not starved down and not pork fat. Plenty of exercise is important during pregnancy, and the sow should be provided with it by being in pasture, or in such way as the breeder finds best adapted to his situation; also a variety of food, of which corn is not too large a part. If in pig it may be known usually 20 or 21 days after mating. The period of gestation is about 112 days. Young sows sometimes carry their first litters for a slightly shorter period, not infrequently farrowing in 106 days or 108 days, while old sows may take possibly 115 days.

Feeding Pregnant Sows

Sows in pig should not be herded with fattening hogs kept on corn, but be in pasture if possible, with comfortable shelter or shade accessible, and given a supply of slop, such for example, as equal parts of shorts, corn meal and wheat bran mixed in water or milk. Feeds which supply considerable bulk are preferable, and those tending to prevent constipation are important. Sows wintered largely on alfalfa hay are noted for their robust litters and strong flow of milk the following spring.

Care of Sows and Pigs at Farrowing Time

Of course, the most desirable time for pigs to be farrowed is during the first mild days of spring, or say early in April, which would require breeding the sows as near as might be from December 10th to 20th. Where shelter and conveniences make the new born pigs safely comfortable and safe, they can come somewhat earlier and thus have a longer season before maturity the succeeding fall. Spring is the natural season for most young animals to arrive and have the most promising start in life, and as a rule, those born at another season seem in a greater or less degree handicapped in spite of all the care than can be given. Notwithstanding their general hardiness pigs are sensitive to both heat and cold, against which their coats are insufficient. The newly-born pigs may be much protected from crushing against the walls of the pen or nest by the mother, by a fender made of a scantling, rail or pole securely fastened, say eight inches from the walls of her pen and the same distance from the floor.

There are plenty of arguments for two litters a year; many breeders are able to keep fall litters thrifty from start

to finish, but on the whole the chances are against it. Fall pigs are liable to suffer a good deal from cold, to become lousy, have scours, and be afflicted with some of the various skin diseases, such as mange. With proper care these drawbacks do not occur, but not half the pigs raised have proper care. In winter they usually have too little or too much bedding. In the former case they suffer from cold; in the latter they pile and become overheated, and when they come out into a cold air the change is so violent that coughs or other worse evils follow.

Protection Against Vermin and Skin Diseases

When pigs become mangy, or while they have mange, there is no profit in them. An excellent protection against vermin and skin diseases in the warmer weather is a cement wallowing tank or vat, in the pasture or hog lot, filled with water the surface of which has a coating of crude petroleum. Swine will bathe in this, doctoring and keeping themselves free from vermin and skin ailments. The tank should by rights be shedded over.

Feeding Young Pigs

For the first weeks the mother's milk is the pig's drink as well as food, and therefore in caring for suckling sows it should be the aim so to feed them that milk not feverish and of only medium richness, will be furnished instead of a limited supply of that which is extremely rich—the latter being more liable to cause thumps, scours and unsatisfactory growth. More economical gains are made from the sow's milk than in any other way, and the sow will furnish nourishment for her young at less cost for the raw material than any other animal on the farm. Pigs should not be exposed to cold rain or winds. Where they can, without dan-

ger, they should be out in the sun within 24 hours from birth and after that run in and out at will.

A new pig's body is largely water, and to grow he must have food that will produce tissue. That is why the milk, primarily designed to furnish proper nourishment for growing animals, needs to be, as it is, so rich in nitrogenous substance. Later, when the time comes that he is intended for quick fattening, he should, naturally, be supplied with feed containing much fat-making material, and it is that quality which has given Indian corn its high place in finishing hogs for slaughter. It is readily seen, therefore, that different kinds of feeds will be needed to give the most profitable results, according to the stage of the growth of the animal, the energy required for its maintenance, and the end to which it is destined. The aim of the judicious feeder is to add constantly to the flesh acquired before weaning, bringing the hog up to 250 to 400 pounds as early and on as inexpensive feed as possible—and a pig should be kept growing every hour of its life. The young will naturally put on weight more cheaply than the older ones, and gains after ten months cost considerably more per pound than those made earlier.

Fecundity of Sows

At the Iowa station it was found that 15 sows bred at eight or nine months averaged seven and two-thirds pigs per litter, while 14 sows about 24 months old averaged nine and six-tenths pigs, and aged sows averaged ten and six-tenths per litter. Pigs from the younger sows weighed on an average 2.39 pounds each; from the two-year-old sows 2.63, and from the aged sows 2.61 pounds. Six weeks old the pigs from the young sows made an average daily gain of .32 pounds, from the two-year-old sows .40 pounds. That is, the two-year-old sows farrowed 24 per cent. more pigs

than the young sows, and the still older sows farrowed 30 per cent. more. The weight of the pigs from the two-year-olds was 9 per cent. greater than that of the young sows, while the pigs from the older sows were 12 per cent. larger than from the young sows. The pigs from the two-year-olds made a more rapid gain than those from the young sows, by 26 per cent. In every instance the older sows farrowed more pigs per litter, heavier pigs, and their pigs made the most rapid growth.

The Wisconsin station tested the relative sizes and weights in litters from young and old sows, with astonishing results. Sows weighing an average of 482 pounds at farrowing averaged 9.2 pigs per litter, having a weight of 27 pounds. From sows weighing 307 pounds the average litter was 6.7 pigs, and their weight 16 pounds. Where the average weight per sow was 238 pounds the average number in a litter was 5.5 pigs and their weight 14 pounds. Sows between the ages of four and five years averaged nine pigs to a litter, weighing 26 pounds; sows between two and three years old averaged 7.5 pigs, of 19.7 pounds weight, and sows a year old produced 7.8 pigs, averaging 14.2 pounds per litter.

Geo. M. Rommel, of the Bureau of Animal Industry, compiled from records of the Poland-China and Duroc-Jersey associations figures showing the fecundity of such a great number of sows of these breeds as to make them fully representative. Observations of 14,703 Poland-China litters in the five years, 1882-86 inclusive, disclosed an average of 7.04 pigs per litter. Observations of 39,812 litters of the same breed in the years 1898-1902, showed an average of 7.52 pigs. This was an increase in the latter five years of .48, or nearly one-half pig per litter, a percentage of 6.81. From 1893 to 1897 inclusive, 3,762 Duroc-Jersey sows aver-

aged 9.22 pigs each. From 1898 to 1902 inclusive, 17,890 sows averaged 9.27 pigs each, or an increase of .054 per cent. Of the more than 76,000 sows of both breeds under these observations one Poland-China farrowed 20 pigs and two Duroc-Jerseys a like number.

Weaning Pigs

Pigs are weaned when from seven to ten weeks old. Frequently a sow will herself wean her pigs at the proper time. It is not advisable to take all from the sow at once, unless one or two can be turned with her some hours later, to draw the milk she will have at that time, and again, say after a lapse of 24 hours. The preferred way is to leave about two of the smallest with her for several days, and after that leave only one for two or three days more, by which time the flow of milk will have so gradually subsided that no injury will result to the sow by keeping them entirely away from her. This extra milk helps to push the smaller pigs toward an equality with their thriftier mates.

Feedings and Fattening of Hogs

Supplemental to pasture and a grain ration the by-products of the cow are of great value to swine at any age. Where dairies or butter factories are, or where cows are kept for other purposes than the sale of milk as such, the pig is a most useful and profitable adjunct. Upon the skim milk, judiciously used with other and more substantial foods, he thrives, grows and fattens, utilizing a by-product of tremendous volume, which otherwise would represent little of available value. Much of this could come under the head of slop or swill, but there is a wide difference between slop and swill. Slop is properly a hog's relish, while swill is too frequently nothing more than water polluted with

unhealthful refuse, and in a condition of decay and filth it may cause a loss of valuable animals. Swill and garbage from city hotels and restaurants not infrequently contain substances extremely injurious to any animal eating them. Where refuse, grease, milk, whey and other things that go to make up swill are left in a barrel day after day, bacterial growths develop and chemical changes take place which often more than counteract any value the swill may have. However, when much slop or swill is given to hogs a supply of wholesome water ought to be within their reach at all times. Soup, however abundantly balanced, is not a satisfactory substitute for drinking water. One authority finds that the proper water supply, or its equivalent, ranges from 12 pounds daily, per hundred pounds of animal at weaning time down to 4 pounds per hundred during the fattening period.

The Importance of Correctly Balanced Rations

In corn-growing territory hog-growers find their abundant and inexpensive corn a main reliance. It should be considered but one of the elements in a reasonably balanced ration. Attempting to rear hogs on corn alone, in whatever form, is a false economy by which the feeder cheats both himself and his hogs. Its natural supplements are those which furnish protein and mineral matter, and, if not easily available on the farm they are usually purchaseable so as to be used at a profit. Some, like clover, alfalfa, rape and other pasturage, are unquestioned as to their desirable qualities, and others, as the prepared meat scraps from the great packing houses and known by their various trade names, such as meat meal or tankage, have rapidly come in favor for the large amount of protein they supply at a moderate cost. The ash or mineral matter of

corn is not digestible by swine, and the absence of mineral matter in their food tends to an imperfect, bony structure; yet it is neither difficult nor expensive to supply wood ashes, salt, coal, charcoal or charred cobs as correctives, available along with their corn. The proper supplementary feeds used to balance the corn in a ration not only give better results in fattening, but also make possible a more economical ration. Experiment stations have repeatedly demonstrated that cooking or soaking grain for swine has little or no advantage.

Pasturage

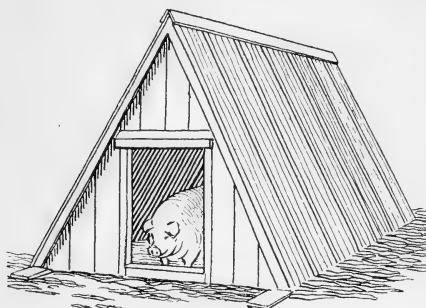
Where alfalfa is not grown red clover is the standard hog pasture, but it is scarcely comparable to alfalfa. An acre of red clover should, as an average, support six to ten well-grown hogs for three or four months. The number that alfalfa will carry per acre will vary. River valley and creek bottom land having a good stand will carry from 15 to 20 head of 50 to 125-pound shoats per acre. Upland of fair average fertility will support from 8 to 10 head of the same kind.

When a field is used only for pasture it is better to divide it into several lots and move the hogs from one to the other as occasion suggests. White clover, bluegrass, rye, rape, cowpeas, vetch, wheat and oats are also useful pasture plants. Providing some variety is much better than dependence upon any single growth, however excellent that one may be. It is much the best economy to furnish swine a grain ration when they are on pasture. One man estimates that it takes from one-half to one-third less corn on alfalfa pasture than on a straight grain ration to make a hog ready for market.

A farmer who raises about a thousand hogs annually and who in one year sold \$11,200 worth, keeps his hogs on

alfalfa pasture until about eight months old, giving one ear of corn per head daily. He then full-feeds them on corn for a month or two and sells at an average weight of 200 to 225 pounds. Another feeds as much corn and slop as the pigs will clean up, all the while grazing them on alfalfa, and sells when six to eight months old at weights of 200 to 300 pounds. One, who raises about a thousand head a year, feeds with pasture all the corn the pigs will eat, beginning shortly after weaning and continuing until sold at ten to eleven months, averaging about 275 pounds. One of the most extensive and successful breeders in the Middle West, says 25 years of pasturing hogs of all ages on alfalfa proves conclusively to him that a fourth to a half grain ration, while they are on such pasture, will produce greater growth in a given time than when in dry lots on full feeds of corn. A great advantage of alfalfa as a pasture is that it affords a fresh growth throughout the grazing season.

Housing Hogs



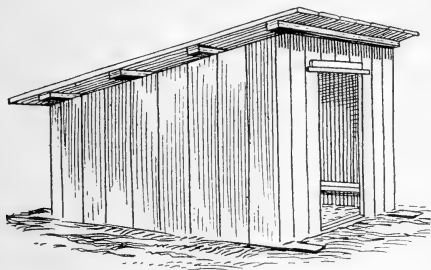
"A" Shaped Portable House

Standard type of hog house, easy of construction. Depth, 9 ft. 4 in.; width, 7 ft. 8 in. Height about 6 ft.; 2x4-in. joists; give a foundation for floor. This house can be readily moved, enabling the maintenance of sanitary conditions.

Ordinarily large, permanent and expensive hog houses are not best; while small, light, portable wigwams, with or without floors, and holding but a few head, are easily cleaned and disinfected, or moved to a new and clean location. For pens, light galvanized iron troughs are extremely

satisfactory and easily cleansed. The latter is desirable in any form of trough. Do not permit feed to remain in them to sour and decompose.

Ailments, Preventives and Remedies



Shed Roof Hog House

A more expensive type than "A" shape. Size 6 ft. 4 in. wide; 8 ft. long; 6 ft. 2 in. high in front and 3 ft. high in the rear.

A type of house that allows better ventilation by the addition of openings at the top below the eaves.

The principal ailments that interfere with the profits of swine-growing are cholera, intestinal worms and lice. Cholera costs farmers untold millions of dollars each year, but no one knows exactly what it is, its cause or a cure, although serum injection is now obtainable from Government and

State laboratories which properly used in time is a quite dependable preventive. This should be administered by a veterinarian, acquainted with such work and its results. Cholera infection is spread by diseased hogs, and is carried from farm to farm by the feet of visitors, by dogs, cats, buzzards, pigeons, sparrows and running water. Government authorities have long recommended the following mixture as useful for protection against cholera, worms and other swine affliction, viz.:

Cholera Preventive

One pound each of pulverized wood charcoal, sulphur, sodium sulphate and antimony sulphide, with two pounds

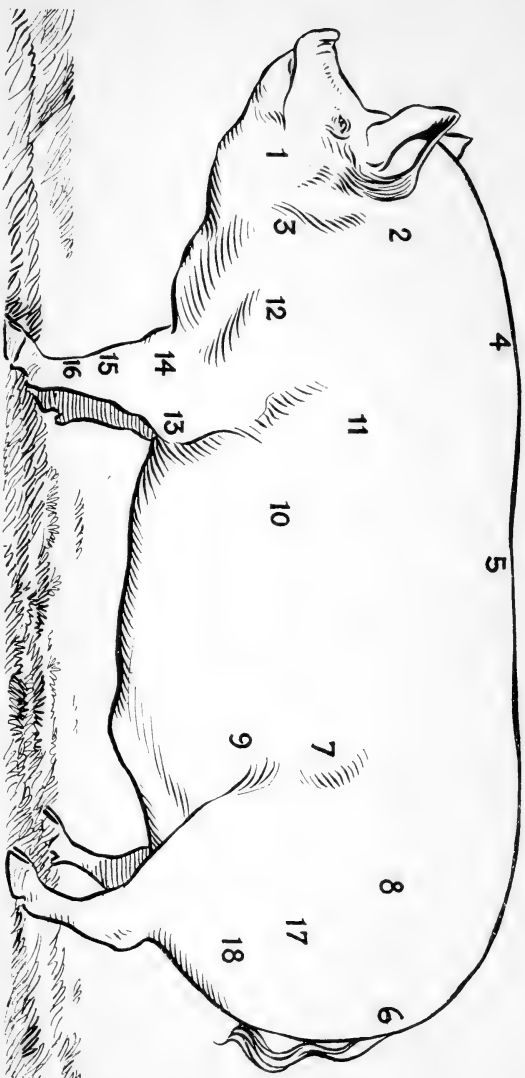
each of sodium chloride, sodium bicarbonate, and sodium hyposulphite, all thoroughly mixed and a tablespoonful given in ground feed once a day to hogs weighing 200 pounds, and to others in proportion to their weight.

Worm Preventive

A worm preventive highly approved is 10 pounds each of pulverized charcoal, air slaked lime and hardwood ashes, and 5 pounds each of common salt and sulphur with one pound of pulverized sulphate of iron all thoroughly mixed and kept in a dry place where swine may use it at will.

Treatment for Lice

Lice often become a sad torment to swine, breeding in myriads, especially behind the ears and forearms, between the forelegs and about the flanks, making thrift impossible. Kerosene mixed with half its quantity of lard oil, applied with a brush or otherwise two or three times at intervals of a week will prove fatal to the lice and their eggs. Almost any greasy substance is useful. There are also on sale various patented dips and contrivances for administering them which serve their purpose admirably and are judicious investments. Most of these constitute, too, excellent treatment for mange and similar skin ailments to which swine are often subject.



The numbers shown in the above diagram indicate the location of the various parts of the hog: 1. Jowl. 2. Neck. 3. Throat. 4. Withers. 5. Back. 6. Buttocks. 7. Hips. 8. Side. 9. Belly. 10. Ribs. 11. Shoulders. 12. Shoulder joint. 13. Elbow joint. 14. Arm. 15. Knee joint. 16. Shank. 17. Hip joint. 18. Ham.

Pork Products

The Making of Country Sausage and Lard

By CAMILLUS PHILLIPS

of Traymore Manor, Traymore, Bucks County, Pa.

(PREFATORY NOTE:—Mr. Phillips has made, for a great number of years past, in the heart of the banner farming county of Pennsylvania, a series of investigations and studies of farm butchering, with special reference to the home production of country sausage and lard, not only on the limited scale required for health and economy in the farm home table, but also on the basis of adding a substantial cash amount to the year's income by sales outside. The processes outlined here are the essence of the skill gained in the course of butchering and trade, by many local experts, analyzed and condensed by an expert for general application.)

THERE used to be a saying among country sausage makers that you can slide anything into a casing except a horse-shoe; and a good dash of sage would cover up even that. But those days are over.

There is only one way, these times, to make good country sausage and, by means of it, to make good money. That is why, in the course of this description of sausage and lard-making, only one way is given. Yet there are certain details of manufacture, and certain selections of ingredients, praised and practiced by makers aiming at superiority, that can well be dispensed with by a farmer who aims to produce only a first class sausage at a first class profit. He has always a market a good deal bigger than he is for plain, honest country sausage and good, solid, honest lard. It

will always cost him more than it is worth to chase the rainbow of the market for sausage with frills on it.

It may be said that every farmer, no matter how few his acres or how poor—no matter whether he can raise a thousand hogs or can't feed a shoat—has a gold mine in his sausage stuffer—provided he owns the right make of stuffer. For it is a permanent fact that, whether corn costs 50 cents or \$1 a bushel and hogs bring \$5 or \$12 a hundred, any farmer with plain horse sense, and the right machinery, can turn hogs into country sausage, lard, and hard cash enough to pay a good living profit. If he can't raise hogs, he can buy them; the margin of profit is sure to be there—as often as not, a bigger margin for the farmer who butchers than for the one who merely feeds them.

Preferred Breeds for Sausage and Lard

Men who raise their animals with the definite aim of turning them into country sausage, have generally a preference for Berkshires as best meeting the prime requirements of age and weight. But results are usually excellent with O. I. C. and also with Poland-Chinas. Under similar conditions, the Duroc-Jersey and the Poland-China breeds are apt to run more to lard tendencies; but they, too, are available for both purposes. And many hog growers are well satisfied with the results attained by means of cross breeds. In practice, particularly where a man has to buy in order to supplement his own stock, the good, satisfactory sausage hog is always "as is," whether his breed be Berkshire or "boardyard." And, if he isn't all fat, he is likely to make good sausage, even though his age be up to five years and his weight to 500 pounds. Given the choice, far better country sausage will go into the casings from an old animal than from a very young one, for the older meat

is dryer and the sausage stands up far better in the frying pan. What's more, the profit, proportionately, is much greater on the full grown animal than it can be on any pig of 4 months, even with a weight of 125 to 140 pounds—which happens mighty seldom.

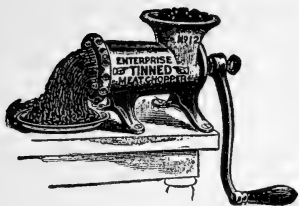
Profitable Age and Weight for Slaughtering

In the past, the standard age for a sausage and lard hog was 1 year. Modern experts in feeding, handling selected strains, have been able to show 200 pounds at an age of 5 months. The expert country sausage maker today is well satisfied to find his hogs between those two standards—to work with animals 8 to 10 months old that have an average weight of 200 pounds, dressed. That constitutes the ideal general profit weight, with the carcass in ideal condition for supplying firm yet tender sausage meat and lard that, with the least outlay of fuel and labor, will stand up well under all ordinary temperatures. Such a hog, dressed at 200 pounds, will have weighed about 250 on the foot. It can fairly be relied upon to furnish 60 pounds of lard and at least 100 pounds of country sausage.

Necessary Equipment for Making of Sausage and Lard

Apart from the chopper and the stuffer and lard press—two items which must embody mechanical perfection—the farmer's equipment for the business can be so simplified that it need cost him practically nothing; and the special sausage and lard outfit is now made, in perfect adaptation to its purposes, at a price so low that the business can be started, on its mechanical side, with an investment of only a few dollars.

The Perfect Sausage Chopper

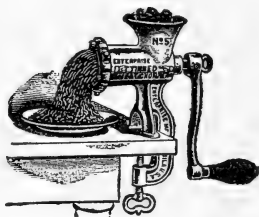


A knife and plate chopper of the style that screws fast to table or block. This machine will chop three pounds of meat per minute.

The one meat-and-food chopper now employed by makers of country sausage who are gaining local reputations — some among them national reputations—for quality, costs no more than inferior machines, yet it is constructed wholly on the cutting principle, having a four-bladed steel knife, razor like in sharp-

ness, revolving

against the perforated steel plate to which the meat is driven by the screw. Capable of a relatively enormous output, it is marvelous that a machine of such productiveness, made in all sizes from hand work up to immense power outfits, could be adjusted to so fine a nicety, and, after years of service, never weaken and never fail to run any way but true.



Family size style of knife and plate chopper.

Attaches to table by means of thumb-screw clamp. Chops one and one-half pounds of meat per minute.



Knife



Plate

Four-bladed, keen-edged, steel knife that revolves against perforated steel plate, giving the true slicing cut.

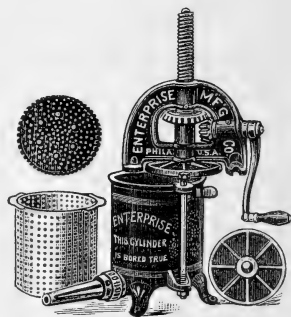
Perforated steel plate. The meat is forced by means of the feed screw of the chopper against and into the perforations of the plate, as the revolving steel knife slices them into tiny uniform particles.

The Perfect Sausage Stuffer and Lard Press

The stuffing machine must embody a principle of equal importance for the purpose intended—the principle of exclusion of the air from the casings. Ordinary stuffers, admitting even a few traces of air into the sausage, make certain its rapid loss of freshness and the development of all the dangerous taints incident to pork. But the ideal meat chopper which has been described has made for it and its press an equally ideal stuffing attachment, with corrugations that ensure absolute exclusion of the air and make a sausage that keeps in a manner astonishing to those accustomed to expect a product which must be cooked and eaten immediately, lest it should have already begun to spoil.

The sausage stuffer, which is also the lard press, that will handle large quantities of sausage or lard, calls for an exactness in construction that matches the nicety of the chopper. The cylinder must be bored true—perfectly true—true to one-thousandth part of an inch; so that, the plunger plate shall fit the cylinder, from top to bottom, with unfailing and hair-breadth accuracy.

Imperfect fitting is what makes so many stuffers bind and, when the pressure is increased to carry the plunger plate down in the cylinder, break like brittle china. The perfect stuffer, too, is obtainable—made with the same regard for the essential basic principle involved and constructed with the same



The stuffer with the patented corrugated spout that prevents air from entering the sausage casing. The iron cylinder of this stuffer is bored true. The plunger plate fits with mechanical accuracy and cannot jam or bind. Note the broad lips of the tin strainer used in pressing lard. These lips enable the operator to secure a firm hold and prevent burning the hands when the strainer is filled with hot cracklings.

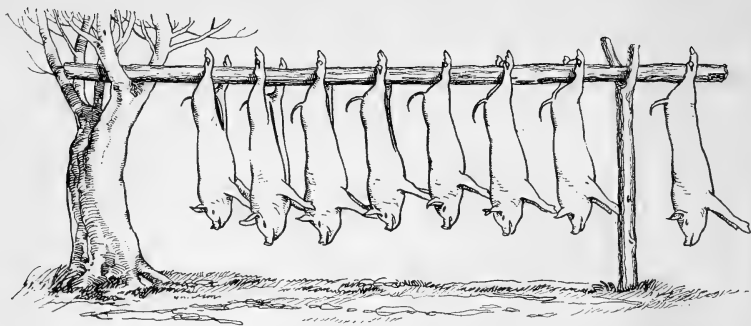
fineness combined with strength. Every hardware and implement dealer in the United States and Canada knows the identifying marks which have been specified here; keep the appliances always in stock, and sell them at prices which are extremely low compared to the profit they enable the farmer to obtain from the selling of his hogs as pork products. With whichever sizes he may require of these all-important means for making country sausage and lard, installed and ready for service, no farmer need venture an additional outlay, except for the raw material. But if he can spare only a modest sum for his first investment, he will find himself more than repaid in economy of time and trouble.



Tepee form of scaffold made by binding together with rope or wire three saplings. This scaffold can be used to support a single carcass, or can, if heavier timber is unavailable, be used as a standard in the support of the scaffold rail.

Appliances for Slaughtering and Dressing

Thus, he can erect a dressing scaffold by means of three stout saplings in tepee form with a fence rail laid from their top to the crotch of an apple tree; and it will work as well as if he hired a carpenter from town to build a scaffold of selected pine, guaranteed free from knots and varnished like a market rack. And he can make his own gambrels, of oak or hickory, as well as a supply house can furnish them. He can contrive, from the odds and ends of the farm equipment, the butcher knife that is to shave the hogs; or he can spend from 40 to 50 cents for a new one and a



A safe and secure method of hanging carcasses of hogs for bleeding and dressing. The crotch of a tree has been used as one of the standards for the rail of this quickly-erected scaffold.

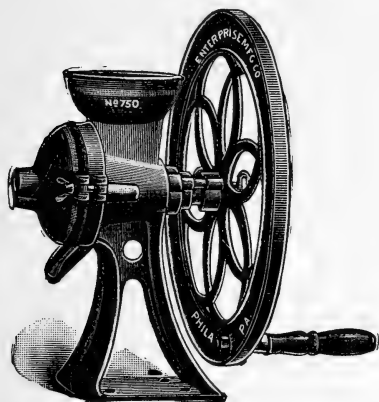
good one. He can buy a scraper for 15 cents or he can use the butt of an old-fashioned candlestick—and a mighty good scraper a candlestick makes, at that. He can unhead a barrel and have for nothing a scalding tub that will start him in business on a scale big enough to make money that is worth while; but he will make no very serious mistake if he decides to spend the \$28 or \$30 necessary for the regulation hog scald, which combines all the items of the outfit needed to prepare the carcass up to the time it lies on the butchering table.

Such a scald includes a caldron of galvanized iron holding two barrels of water, together with the fire frame of iron, equipped to burn wood so economically that the water can be heated to its due scalding temperature within one-half hour.

The saving of fuel alone with such an apparatus speedily repays the original outlay.

The other one appliance required for a wholly profitable farm butchering plant is something which should be on every

farm anyway—a really efficient bone mill. This, too, can be procured in the necessary perfection for speed of operation, economy of labor and fineness of output; and it can be had either for hand or for power. Like all the other machines



Bone, shell and corn mill of a compact type that takes up but little room. Made for bolting securely to heavy table. The grinders are especially prepared metal, warranted equal to steel. An extraordinarily useful machine on the farm.

working order. The same hardware man or implement dealer who can so readily comply with a call for the perfect cutter and stuffer will have on hand the one efficient bone, shell and corn mill, for it is manufactured by the same company.

A Modern Method of Killing Hogs

There has always been a good deal of needless mystery surrounding the art of killing a hog, largely because a very simple act has had so many inexpert hands to perform it. The novice can do no better than adopt the method used by skilled, old-time farm butchers, who still employ it.

made for the uses of the farm butcher, it occupies the minimum space possible and can be installed at any convenient post or wall. Such a grinder, designed for use on dry bones, is equally effective for the countless other needs of the modern farm—in grinding oyster shells, corn, roots, salt, in fact for reducing to fine condition every substance that presents resistance calling for a machine which no quality of mere hardness can put out of

The average man can use a rifle, at close range, with much greater accuracy than he can swing a pole axe. Indeed, I have seen the best killers in the city slaughter houses miss their stroke twice in a score of hogs and fairly mash the skull to pieces before they could give the suffering animal its quietus. Even when the blow strikes surely, in the center of the skull above the eyes, it never fails to drive around it splinters of bone. But the rifle bullet, planted in the same spot, makes a small, neat perforation and brings instant unconsciousness and death.

Save the Blood

The careful farm butcher, ambitious to rival those great establishments where nothing is lost but the squeal, will make a special trough to hold his hog when he kills, so inclined that the blood will run into a tank, where it can be kept clean and used for that delicacy, blood pudding, or blutwurst, or can be soaked up by any handy absorbent and used later as a fertilizer. Dried blood fertilizer, containing nothing better than the drainage of hog killing, is one of the best and highest priced fertilizers sold; and a hog of 250 pounds at the time of slaughter will yield 6 quarts of blood.

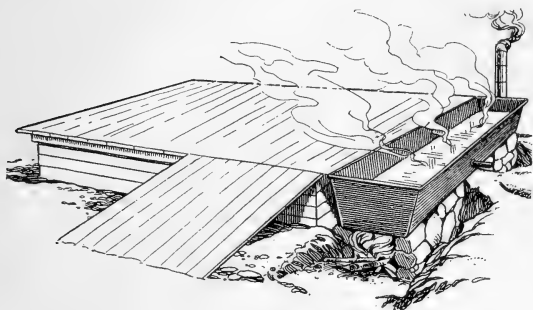
The First Cut

When the animal drops under the rifle shot, the butcher lifts the left front leg, drives the knife into the throat just above the point of the breastbone and cuts upward to the chin, completely severing the jugular vein.

Scalding

The carcass is ready for scalding when the blood flow ends. There are husky butchers who will handle a 250-pound carcass by main strength and sleight-of-hand; but the

average man will prefer a pulley wheel for lowering the body into the caldron, whether it is home-made from a barrel or is the regulation iron boiler. A little farm butchery secret of the scalding is to mix a pint of pine tar to a



Scalding vat attached to side of platform for scraping. The convenience of this arrangement is immediately seen. The slaughtered hog can be hauled up the sloping platform and into the vat, lifted out again and placed upon the platform for scraping with the minimum of handling. Platform is about 6x8 ft., raised about 2½ ft. from the ground. Note the fireway and chimney arranged so as to distribute the heat evenly on the bottom of the vat.

hundred gallons of scalding water; or, if plenty of wood ashes are available, to throw in a quantity of them. The addition of either to the water makes the hair mat and scrape off much more readily.

Since the scraped hair of a farm plant is relatively so small in quantity, it rarely pays to endeavor to save it for sale. Going into the manure pile, especially with the wood ashes, it makes a valuable fertilizer.

Scraping

The scraping must be done as quickly as possible after scalding; the shaving can follow, with cold water, without removing the carcass from the table. Then insert the gambrel under the gambrel strings at the hind heels and hang the carcass on the dressing scaffold, sliding onwards every carcass as the next is hung, until the cross piece is filled.

Scrubbing and Shaving

As soon as the carcass is hung, it may be given its final cleaning, with cold water and a scrubbing brush. And then it should have its final shave, making a clean job of one which careless butchers leave to the single operation of the shaving knife.

Opening the Carcass

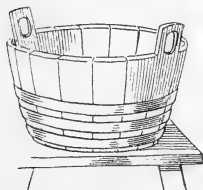
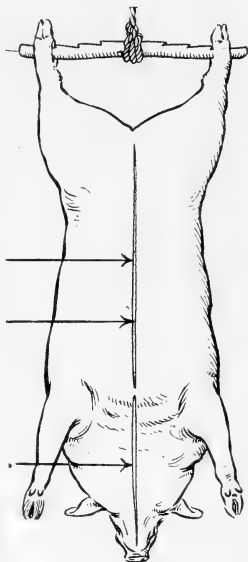
To open the carcass, when the animal is not more than 6 or 8 months old, cut first from the crotch downward, merely splitting the skin, until the end of the throat cut is reached. That allows the skin to gape along either side of

Hanging carcass by gambrel, with tub at side for entrails. Note the location and length of the various cuts.

In the first cut the knife must be driven deeply so as to sever all the large veins in the throat of the pig.

The second cut merely separates the hide when the natural distention of the flesh will draw the two sides of the cut apart.

The third cut must be deep and should be started close to the haft of the knife, owing to the fact that it is necessary to separate the breast-bone of the hog during the first portion of this third cut. As the knife travels upward, it is



drawn nearer to the surface so as not to disturb any of the large organs and entrails in this portion of the carcass. Carefulness in making this last section saves trouble.

the cut and affords free play for the knife in the real opening cut, which follows. At the point where the throat cut is met on the downward stroke, turn the blade, drive it in and, cutting upward with the full power of the arms and legs, come right through the breastbone and so on upward to the crotch.

Insert a 14- or 16-inch stretcher, according to the size of the carcass, and take out the entrails.

Emptying the Carcass

Beside the carcass there should be, in readiness, a tub. The bowel tract, loosened at the rectum, is brought down, with the stomach attached, the butcher resting them on his arm as he proceeds and, when they are free, dropping them into the handy tub. Next he removes the liver, heart, lights and windpipe, with the throttle attached. He hangs up the series of parts by the windpipe and, first of all, pulls off the gall bladder from the liver. Then he removes the lights; then the valves, or "deaf ears" from the heart, which he cuts open to allow for drainage of the ventricles. Heart and liver, well rinsed in cold water, are put in a salt solution, 2 pounds to a gallon, to soak over night. The lights and entrails, ordinarily disposed of as fertilizer, can be given a sale for direct profit if negro trade exists in the neighborhood. Many negroes use the lights as food; the entrails, turned and washed, are fried crisp and enjoyed under the old English name of "chitterlings."

The carcass, thus dressed, is generally assumed to have lost 20 per cent. in weight; and it is on the basis of 20 per cent. reduction that market weights of hogs afoot and dressed are appraised. All that remains is to wash out the cavity with water, stick a corn cob in the mouth for continuous drainage, and let the carcass hang for cooling. The minimum is from 6 to 8 hours; most farm butchers find it convenient to let the carcass hang until next morning, when the weather is suitable.

Cutting Up

The first operation to follow is the cutting off of the head, which is quartered by splitting lengthwise and then across. Take out the tongue and the brain, and cut off the snout and the ears, all useful as ingredients of that other

pride of the delicatessen stores, hogshhead cheese. The jawbones, with the teeth—most farmers find them the uncleanly dirty parts of the animal—can be removed and let go as fertilizer. The jowls can go into the hogshhead cheese; or they can be salted; or they can be used in that wondrous dish, on which Pennsylvania's Caesars feed, scrapple.

Now split the body into halves, leaving on either side its due share of the kidneys and their leaf lard. Treating both sides alike, take out first the kidneys and the leaf lard. Saw the ribs at a distance of 4 inches from the backbone, a cut that gives the pork loin, from the ham up to the neck. Cut out the ham; cut out the shoulder. That leaves the spare ribs, which constitute the side of bacon. If, in the country sausage, the ham as well as the shoulders are worked up, the bacon must be used as well, or the sausage will be too dry. Where all the carcass is to be worked up into country sausage and lard, it is possible to take off the skin whole; and then it has a value for tanning and can be sold on its own merits. But wherever scrapple is salable the skin can be cut on the various parts, and, when trimmed off, serves as an excellent scrapple ingredient. The lard of the hams and shoulders is cut away in the trimming attached to their sections of skin and later is cut from the skin preparatory to the rendering.

By-products

The entrails—including the stomach, the bowel tract and the bladder—furnish their proportion of lard—from 5 to 6 pounds from a 200-pound animal. When this gut fat, as it is termed, has been removed it is soaked over night in water, washed well the next day, and rendered out with the other lard fats. So treated, the gut fat odors are first reduced to the lowest measure and then are merged with the

other fats so thoroughly that they are not perceptible. The paunches, well cleaned and stuffed with sausage meat, hold about five pounds, and can be sold under the name of "Tom Thumbs" at regular country sausage prices. The weight of a paunch itself being about a pound, a retail price of 22 cents per pound for a Tom Thumb sausage package represents a clear gain of 22 cents on one item of the hog viscera which is frequently thrown away. The sweetbreads, which come away with the entrails, are classed as a delicacy and a fair market price for them is 25 cents per pair. The kidneys are relished not only by negro consumers, but by many whites; and they make be looked upon as commanding a market for themselves just as they are.

Why Country Sausage is Profitable

The making of country sausage is something that is far more simple when it is done well than when it is done badly—and infinitely more profitable. It was long the fixed belief of country butchers that sausage gave its due returns only when made from the shoulders, the ham trimmings, and the bacon trimmings, which are represented by the 2-inch cuts on either side of the belly. But experience has demonstrated that not only can the rest of the carcass be worked up into country sausage of the finest quality, but it can be done at a profit relatively higher than the gain available from separate sale. Loins, hams, all the parts which furnish meat desirable for other familiar uses, usually gain in value by passing through the meat chopper and the stuffer. For the higher values of some parts in the operation the reason is obvious, as in the case of fresh hams which, bringing 18 cents per pound as they are, increase to 22 cents when they are in sausage casings, a gain of more than 22 percent. But there is another reason, ordinarily not guessed. The intro-

duction of every additional pound of lean meat calls for the addition of just half the weight in fats; and so portions of the carcass which would otherwise be sold, after rendering, in the form of lard, at the comparatively low lard price, go to the consumer not only in their full, original weight, but also at a price which is commonly 50 per cent. higher than the selling price of lard.

The Secret of Good Sausage

There is, however, a sharply defined limit at which the introduction of fats for country sausage of high quality must stop; and the setting of that limit is commonly what constitutes the difference between the maker of a large sausage trade and the failure in the business. The buying public is slow to forget the sausage seller whose goods shrink in the pan from the size of a banana to a peanut. That limit is represented, in theory, by the normal proportion of fat to lean in the strictly sausage meat of a well-fed animal. In practice, where the other cuts are worked up, the safe rule is one part of fat to two parts of lean. Well mixed, a country sausage so proportioned will not shrink in the frying and will stand the test of the most critical among connoisseurs of country sausage anywhere in the United States.

Lean and fat should be cut into 2-inch cubes and then thoroughly mixed together in order to avoid, in the casing, those streaks of fat which, in badly-made sausage, fry down to the wasp waists that make housewives shriek they've been swindled. The mixing operation should carry into the mass the seasoning.

Next to the proportioning of fat to lean, the seasoning goes further in fixing the status and the future of a country sausage maker than any other factor; and, next to guessing the weather, there is nothing more uncertain. The sea-

soning of country sausage is one modern, overwhelming proof of the ancient dictum that there's no disputing about taste.

It all comes down to a question of sage: Personally, I regard the sage herb as an invention of the Devil, but I have seen the daintiest of the fair maiden guests at famous hotels in New York breakfast on sage-filled country sausage with the appetite Eve brought to the apples of Eden. The plain business course is to play safe until customers express a preference and then to give them the seasoning they desire. The two seasoning recipes, which, in experience, have proved most grateful to the palates of the plain sausage and the sage sausage cases respectively, are these:

Two Famous Tested Recipes

PLAIN COUNTRY SAUSAGE: To 100 pounds of sausage meat, put 22 ounces of salt and 10 ounces of black pepper; smaller quantities in proportion.

SAGE FLAVORED COUNTRY SAUSAGE: To 100 pounds of sausage meat, put 22 ounces of salt, 10 ounces of black pepper, and 12 ounces of sage; smaller quantities in proportion.

The meat and fat, with the seasoning, being thoroughly mixed, the best results are obtained by passing it through the chopper twice, the first cutting being made with the plate carrying $\frac{1}{4}$ -inch holes, the second through the 3-16 inch plate. The second cutting ensures not only complete fineness in the chopping, but serves to perfect the mixing. After that, the stuffing by means of the press with its corrugated stuffer—care being taken not to overload the casings—completes the making of the sausage. It is tight stuffing that is the cause of country sausage bursting open

in the frying; and the ideal sausage is that which, in the pan, browns all around and comes to the table intact.

Sausage Casings

It is, of course, possible and practicable to make use of the hog's own bowel tract as a casing; but it is rated in the regular trade as being rather too large for the purpose of country sausage and, what with the labor of cleaning involved and the cheapness of the usual sheep casings, it scarcely pays to take the trouble. Wherever there is a market available for chitterlings, it pays to dispose of the bowels in their original form and to buy the sheep casings, of which 1 pound should serve for the stuffing of 80 to 100 pounds of sausage.

Link sausage, a form preferred by many consumers, can be made simply taking the coil, pressing back the meat on either hand, and tying a knot in the section of skin thus emptied, repeating the knot at the usual intervals seen in link sausage.

The Keeping of Sausage

It is popularly believed that country sausage cannot be kept beyond the cold weather of the early spring. For those who would enjoy their home-made sausages throughout the summer, it is possible to case the sausage meat in muslin bags about $2\frac{1}{2}$ inches in diameter, which, after filling, should be soaked for 3 days in the ordinary pickle of salt, saltpeter and brown sugar, made strong enough to float an egg. Hung up in a fairly dry cellar, country sausage in this form can be brought to the kitchen any summer day, washed in water, boiled and served cold in slices. Or the regular sausage coils can be fried in the regular way and then packed in a crock. With melted lard poured over it until the crock is filled to the top, the sausage keeps safely through-

out the warm weather. The surface of the lard may show mould; but it does not penetrate below and the sausage comes out of its preservative possessing all of its original flavor.

Scrapple, and How to Make it

The scrapple which has been referred to is a favorite dish in Pennsylvania, where its fond partisans have long believed that it needs only a pioneer elsewhere to give it a national fame beside which the reputation of Boston's beans must sink into oblivion. There is no question but that it finds favor with every person who enjoys country sausage, or that it can serve as a bright, particular star in the galaxy of good, hearty viands, appreciated on the farm table.

For scrapple, boil all bones, scraps and skins in plain water until the meat falls from the bones. Dip out all solids and, on a table that should be zinc-covered, separate the meat from the bones. Run the meat through the chopper, making it very fine. Meanwhile, increase the quantity of liquor in the boiler by adding about 33 per cent. of water and bring it again to a boil. Have prepared a mixture of corn meal, 50 per cent.; middlings, 25 per cent.; and buckwheat, 25 per cent.—the buckwheat being the secret of scrapple's delicious brown crust when it leaves the frying pan. Into the boiling liquor, for 60 gallons, put 3 pounds of salt and 1 pound of black pepper. Then thicken with the grain mixture until the stirrer stands up unsupported in the boiler. Work in then the chopped meat particles until the whole mass is thoroughly mixed. Dip out into shallow, oblong pans, which may hold from 5 to 15 pounds, and set to cool on an open rack. For good scrapple, a price of 8 cents per pound wholesale and 12 cents retail is common enough. When one notes that not only does it dispose of such parts as the liver, heart and tongue, but also of all skin

and of the meat waste attached to the bones, the returns are excellent; but the bulk of the profit comes from the grain and the water it has absorbed in the boiling. Best of all, the consumer, once he has eaten a single slice of the delectable combination, cut to about $\frac{1}{2}$ -inch in thickness and coming from the pan between its own crisp, golden brown crusts, grudges not a cent of the price he has paid above their intrinsic values for the corn meal, the middlings, the buckwheat, and even the water.

Lard Rendering and Packing

You can make lard in any number of satisfactory ways; but, if you have a reasonable prospect of more than a very small business, it will pay to invest from \$25 to \$30 in a 60-gallon lard boiler, which includes the caldron, the cast fire-place and the smoke pipe, the outfit being designed to burn either wood or coal.

In general, the older the hog, and the more nearly corn-fed he was, the better lard he furnishes. Very young animals, and poorly-fed animals, carry fat which, running high in olein, renders out into a lard incapable naturally of sustaining much above 80 degrees Fahrenheit, if that. But expert knowledge can go far in making even inferior lard stand up; and, with good fat to work on, lard of the highest quality can be produced.

Start a brisk fire under the caldron and put in at first no more than 10 pounds of fat. As the lard tries out, add more of the fat, reserving the leaf lard to the last, and stirring frequently until the caldron is filled or the stock of fat has been used up. Then keep under the caldron a moderate fire for a period ranging from 6 to 8 hours, until the cracklings are crisp and well browned. If the fat is unusually high in olein, the fire can be maintained with advantage as

long as 10 hours. It will take a shamefully poor quality of fat to give soft lard after such a rendering. The sausage stuffer and lard press, which has been described, now receives the cracklings and it turns them out as dry as so much punk, ready to be fed to the chickens, or, if the torch of gastronomic enlightenment has passed that way, to go into the scrappe and increase human happiness.

In the lard press have hanging a clean muslin strainer, into which the lard, when the rendering is finished, should be dipped from the caldron. This strainer catches not only the cracklings, but also all the small particles of tissue which must be kept out of the finished product.

The superheated lard, passing through this muslin strainer and out from the press, runs into a large cooling pan, a convenient size for which, is a capacity for 300 pounds of lard.

The cooling pan should be equipped with a spigot through which, when the lard is cooled sufficiently although it should still be freely liquid, it can be run into the tin cans in which it is to be sold. With lard rightly made, there is no need for any kind of preservative, clarifier or bleacher. Keeping quality, clearness and whiteness are all present naturally.

The most satisfactory lard container is tin cans holding 50 pounds, usually costing 25 cents; 25-pound cans sell for 18 cents; 5-pound cans for 5½ cents, and 4-pound cans for 4½ cents.

With pigs selling at \$10 to \$12 per hundredweight, dressed, lard will command usually 12 cents per pound wholesale and 15 cents retail.

Recollecting what has been said regarding the increased value of the fat when it serves to supplement the lean meat

used in country sausage, the farmer who contemplates enlarging his income by the use of the mortgage-lifting meat chopper and lard press can see with half an eye how wise he will be to go the whole hog.

Marking Pigs

The raiser of hogs should early establish a systematic method of marking his swine, not only for the purpose of identification when they have strayed beyond the boundaries of his farm, but so that he may check up carefully, without mistake in his record-book, the age and gain in weight of each individual pig.

Swine are generally marked by notching or punching the ears. A harness punch or any other instrument is used that enables the work to be quickly done. All pigs in a litter should be given an identification mark. Each pig the same mark. If necessary special marks can be put on for the identification of each pig.

A method commonly used is to mark the right ear of the pig with notches or punches to indicate the units and multiples of the figure 1.

One notch on the right ear, lower edge, standing for 1;

On the upper edge for 10;

Two notches on the lower edge represents 2;

Two notches on the upper edge, 20.

The left ear of the pig carries notches or punches indicating the units and multiples of the figure 3.

One notch on the lower edge, standing for 3;

Two notches on the lower edge standing for 6.

One notch on the upper edge standing for 30;

Two notches on the upper edge standing for 60.

One notch on the lower side of right ear; and

One notch on the lower side of left ear, would stand for 4.

Two notches on the lower side of right ear; and one notch on the lower side of left ear would stand for 5.

One notch on the lower side of right ear; and two notches on the lower side of left ear, with one notch on upper side of right ear, stands for 17.

Any combination up to 100 can be made through this system of marking. It is easy to remember by establishing the position of figures 1 and 3, and 10 and 30. The rest of the numbers being merely combinations.

By all means keep an accurate record of your pigs, and their cost. By doing this you can tell exactly at the end of your year just what profits they have brought you. Also by comparison of foods and weights, you can arrive at deductions that will assist materially in the economical feeding of your swine.

Points on Feeding

Before young pigs are weaned, grain rations may be fed. After weaning heavy grain feed may be postponed until cooler weather. Following rations are satisfactory for developing young pigs:

Equal parts of cornmeal, wheat middlings, ground oats, $\frac{1}{8}$ part of oil meal.

Or, equal parts of ground barley, wheat middlings, ground oats; $\frac{1}{8}$ part oil meal.

Or, equal parts cornmeal and wheat middlings, $\frac{1}{8}$ part oil meal.

Or, equal parts of wheat middlings and ground barley; $\frac{1}{8}$ part of oil meal.

First ration is in good proportion to keep the digestive tract in proper condition. During the fattening period corn should be fed in increasing amounts. Oil meal is an important ingredient, as it forms a heavy combination when mixed

with the slop, that prevents settling. Without oil meal or milk in slop, the heavy foods will settle rapidly to the bottom. Oil meal besides regulating the digestive organs gives quality to skin and hair.

Skim Milk is Fine Food

The owner of swine who raises clover, alfalfa and corn, and has a good supply of skim milk needs to purchase but little other food. Skim milk makes a splendid feed for swine. If sufficient quantities are used to form the greater part of the liquid in any ration, oil meal need not be fed. About one hundred pounds of skim milk are equal in value as food to one-half bushel of corn. Buttermilk is equal or even better than skim milk for fattening swine, though not considered as good for young pigs.

Forage Crops

An important part of food supply for swine is good forage. The owner of swine should develop his animals as much as possible on dairy and farm products and forage crops, with a heavy grain feeding for the fattening or finishing period. Native blue grass is a satisfactory pasture in spring and early summer. After July, when this grass becomes dry and ceases to grow, it should be supplemented with rape or other of forage crops. Rape is a valuable forage. Rape should be from 14 inches to 18 inches high when the pigs are turned into it. Some farmers sow rape broadcast with oats and clover, in the proportion of 5 pounds rape, 6 pounds oats, 1 bushel clover per acre. Each acre with a good stand will supply fifteen spring pigs with forage for the rest of the season. Clover before it is matured is a splendid forage crop. Clover and corn make one of the best combinations for cheap pork production. Alfalfa is considered equal to clover. Its value has been demonstrated in the western States, where it is grown abundantly. Field peas and oats usually furnish but a

short period of forage, but on light soil the mixture should prove satisfactory. Red clover and oat mixture properly grown should make a saving of 25 to 30 per cent. in the grain rations. An acre of clover and oats properly grown and cared for should furnish forage from the middle of June to October for fifteen to twenty spring shoats.

Certain precautions are necessary in order to feed forage to advantage. The pig should not be turned into forage until it has a good start. Wet ground and soft feed after a heavy rain is easily damaged by the pigs tramping on the feed and rooting the ground. Better to take the pigs off for a few days until the ground is dried out.

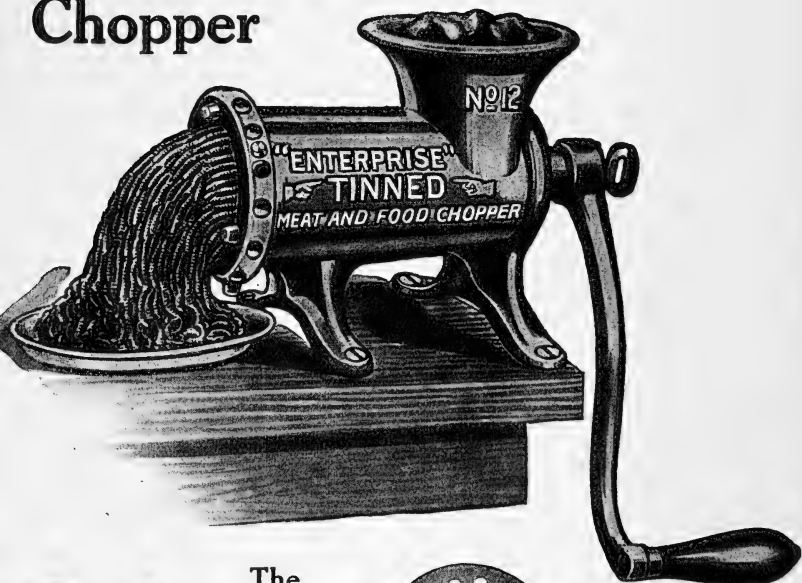
Special Care of Boars

A boar about a year old will have developed four large tusks. These it is necessary to remove to prevent him doing damage to the other animals and to the attendant. After removal, these tusks should be cut twice each year as they continue growing out. The quickest and easiest method of removing tusks is as follows: Place the hog beside a stout fence post, insert a rope in his mouth and tie it tightly over the upper jaw. Then, the head can be put closely in position against the post. With a pair of strong nippers or sharp pinchers similiar to those a blacksmith uses, the tusks can be quickly removed. It is cruel and unnecessary to knock out tusks with a cold chisel. Old boars should be carefully watched as to the condition of their hoofs. It is necessary to trim their feet, and this is best done by the use of the nippers and a rasp. If their skin becomes harsh and scurfy, it can be treated with an application of one-third crude oil and two-thirds warm water; for a mixture of one-third kerosene to about two-thirds machine oil.

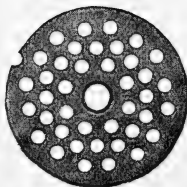
*The Machine with the Knife and Plate
that CUTS Meat and Food*

“ENTERPRISE”

Meat-and-Food Chopper



The
“Enterprise”
Steel Knife
and
Perforated
Plate



“ENTERPRISE” TINNED MEAT AND FOOD CHOPPER

The "ENTERPRISE" Meat-and-Food Chopper

Is Best For Cutting Sausage and Scrapple Meat

THE "ENTERPRISE" Meat and Food Chopper has a knife and plate that actually cuts—like the butcher's sharp cleaver—chopping clean, without stringiness, and does not squeeze, mangle, tear or rend the meat or food, but preserves the flavor-giving juices.

The four-bladed, keen-edged steel knife rotates against a perforated steel plate giving the true shearing cut that "*slices*" all meat or food into uniform tiny particles.

Easily taken apart and cleaned.

"ENTERPRISE" Meat-and-Food Chopper for permanent attachment to table or block. Large family size and sizes especially for butchers, market men, farmers, poultrymen, hotels, restaurants and public institutions.

No. 12 Chops 3 Pounds Minute.....\$2.25

No. 22 Chops 4 Pounds Minute..... 4.00

No. 32 Chops 5 Pounds Minute..... 5.00

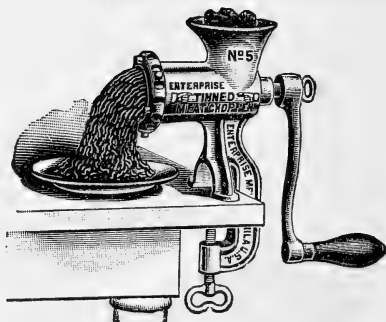
One standard plate, $\frac{3}{16}$ inch holes, and one knife supplied with chopper; other size plates are obtainable for coarser or finer cutting.

Family Size "ENTERPRISE" Meat-and-Food Chopper

This style can be instantly attached to
table by means of thumb-screw clamp

Reduces Cost of Living in the Home

Make dainty dishes
from left-over meats
and foods of all
kinds. Enables
housewives to serve
fish, fowl and vege-
tables of every de-
scription in new and
attractive forms.



Small Family Size, No. 5—\$1.75

Weight, $4\frac{3}{4}$ pounds

Chops $1\frac{1}{2}$ pounds per minute

Supplied with one knife and two plates $\frac{1}{8}$ and $\frac{3}{8}$ inch holes

Large Family Size, No. 10—\$2.50

Weight, $8\frac{3}{4}$ pounds

Chops 3 pounds per minute

All parts standardized and quickly replaced.

Your dealer can supply you.

Cook Book for 4 cents in stamps—the "Enterprising Housekeeper," giving economical ways to prepare breakfast, dinner and supper dishes; 200 tested recipes and housekeeping hints.

THE ENTERPRISE MFG. CO. of PA.

DEPT. B, PHILADELPHIA

*The Machine with the Corrugated Spout
that Prevents Air from Entering the Cas-
ing, Assuring Preservation of Sausage*

“ENTERPRISE”

**Sausage
Stuffer**

**Lard
and Fruit
Press**



The Sausage Stuffer That Gives Perfect Satisfaction

IN its design and manufacture the "ENTERPRISE" Sausage Stuffer not only ensures the highest efficiency in operation, but saves time and labor in the stuffing of sausage and the pressing of lard.

Better Sausage

Sausage stuffed with the "ENTERPRISE" is better preserved, for no air can enter the sausage casing because of the corrugations in the spout of the Sausage Stuffer. This Corrugated Spout is found only in the "ENTERPRISE."

Iron Cylinder Bored True

The iron cylinder is bored true to 1-1000 part of an inch, from top to bottom, therefore the plunger plate can't bind or jam. This careful fitting prevents breakage.

The accurately fitted gears, and long handle make easy turning.

The tin cylinder, or strainer for lard making, has two broad lips. This makes it easy to handle when filled with hot cracklings,

prevents burning the fingers, and gives a "safe grip" when lifting.

This "ENTERPRISE" Stuffer is quickly converted into a Fruit Press and is found exceedingly useful for making wines and jellies from berries and many other fruits.

The spout supplied with the machine has $\frac{3}{4}$ inch outlet; other sizes $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{5}{8}$ inch are obtainable.

All parts of the "ENTERPRISE" Sausage Stuffer, Lard and Fruit Press are standardized:—quickly and easily replaced in case of accident.

You will find the "ENTERPRISE" at most every hardware store.

Made in 9 sizes and styles.

 Tinned  or Japanned.

PRICES

JAPANNED

No. 5—Two Quarts, Rack.....	\$3.75
No. 15—Two Quarts, Screw.....	4.50
No. 25—Four Quarts, Screw.....	5.50
No. 31—Six Quarts, Screw	6.25
No. 35—Eight Quarts, Screw	7.00

TINNED

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No. 30—Four Quarts, Screw.....	6.75
No. 32—Six Quarts, Screw	8.00
No. 40—Eight Quarts, Screw	9.00

“ENTERPRISE”

New Grist Mills

GRIND Corn, Wheat, Rye, Coffee, Salt, and Bark. The Mills have grinders warranted equal to steel—quickly adjusted by thumb screw for all degrees of grinding.

All parts made of best material by skilled labor, ensuring “ENTERPRISE Quality.”

No. 50—\$3.00

DIMENSIONS

Height, $12\frac{3}{4}$ inches
 Length, $7\frac{3}{4}$ inches
 Width, 5 inches
 Dimensions of throat, $1\frac{1}{8} \times 1\frac{1}{8}$ inches
 Wheel, $12\frac{1}{2}$ inches diameter
 Weight, 18 pounds

CAPACITY

$\frac{3}{4}$ bushels of corn per hour

No. 60—\$5.00

DIMENSIONS

Height, 16 inches
 Length, $9\frac{1}{2}$ inches
 Width, $6\frac{5}{8}$ inches
 Dimensions of throat, $2\frac{3}{4} \times 1\frac{5}{8}$ inches
 Wheel, 17 inches diameter
 Weight, 30 pounds

CAPACITY

$1\frac{1}{4}$ bushels of corn per hour

No. 70—\$7.00

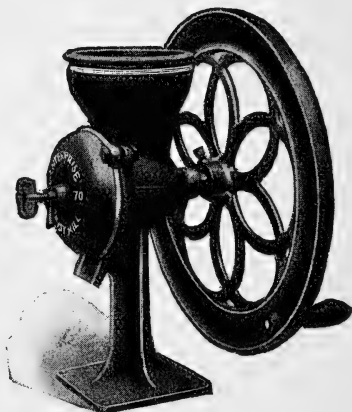
DIMENSIONS

Height, $18\frac{3}{4}$ inches
 Length, $12\frac{1}{4}$ inches
 Width, $7\frac{5}{8}$ inches
 Dimensions of throat, $3\frac{1}{2} \times 1\frac{3}{4}$ inches
 Wheel, 19 inches diameter
 Weight, 49 pounds

CAPACITY

2 bushels of corn per hour

Parts are standardized and quickly replaced in case of accident.



“ENTERPRISE”

Bone, Shell and Corn Mills

WITH grinders warranted equal to steel, these mills grind bones (dry only), oyster and other shells, corn, roots, bark, grain, and salt. Built for strength, durability and compactness. Indispensable to the poultrymen for grinding bones, shells and corn. Farmers find the “ENTERPRISE” Mill quickly pays for itself in the grinding of bones for fertilizer alone.

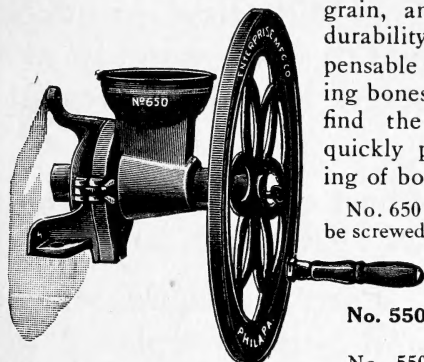
No. 650 takes up but little room as it can be screwed or fastened to wall or post.

PRICES

No. 550—\$7.00 No. 650—\$7.50
No. 750—\$8.50

No. 550 is same as No. 750, but with Crank instead of Fly Wheel.

When desired, we furnish above Mills fitted with 12 x 3 inch single (\$5.00 extra) or double (\$10.00 extra) Pulleys for power.

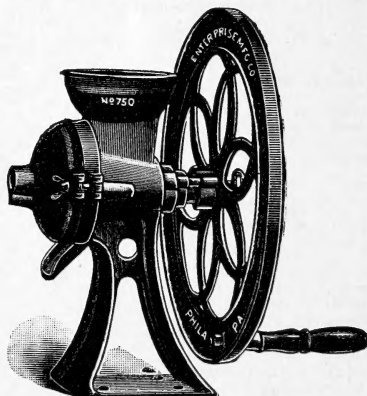


No. 650

Height, 11 inches
Length, 12 inches
Width, 9 inches
Dimensions of throat, 3 x 2 in.
Wheel, 19 inches diameter
Weight, 47½ lbs.

No. 750

Height, 17¼ inches
Length, 12 inches
Width, 8½ inches
Dimensions of throat, 3 x 2 in.
Wheel, 19 inches diameter
Weight, 60 lbs.
Capacity, 1¼ bushels of corn per hour



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